Lead Update

Lead Month Report

Once again HEALTH celebrated RI Lead Poisoning Prevention month in May for the fourth consecutive year. Fifty one organizations (schools, day cares, community-based organizations and health centers) joined us on a month long endeavor of educational and outreach activities, mailings, health fairs, workshops and video presentations targeting parents, professionals and the general public. A calendar of activities was once again developed and distributed to all partners. A conference was organized on May 17th with Dr. Bruce Lanphear from the Children's Hospital Medical Center in Cincinnati, Ohio as keynote speaker on both sessions. Excellence Awards were presented to the medical community on the morning of May 17th, and to the community partners during the afternoon session of the same day. Following are the recipients of the Lead Excellence Awards 2002:

- **"Lead Month Excellence Award"** for achieving their third consecutive year collaborating with Lead Month, this award was given to Blue Cross Blue Shield of RI, Children's Friend and Service, Providence Community Health Centers and Childhood Lead Action Project.

- **"Keep It Clean Excellence Award",** for continuous participation since the first year of the implementation of this campaign. Awards were given to Philip A. Mulvey Company, Standard Hardware Company, Bouchard Hardware Store, Community True Value Hardware Store, Arme's Hardware Store and St. James Hardware, Inc.

- **"Lead Screening Excellence Award"** for achieving a screening rate higher than 97% was given to John E. Concannon, DO. Renaissance Medical Group, Smithfield Pediatrics and Landmark Junior Health Center were also awarded for excellence in *lead screening practices*.

- **Public Health Excellence Award** was received by the City of Pawtucket's School Department and the RI Youth Guidance Center for their partnership in the LEAD SMART project.

The 2002 celebration also included a statewide **Drawing Contest** for children 5 to 12 years of age enrolled in schools. We received nearly 200 drawings and 10 schools participated in the project. Awards were given in three categories:

- **5 year old group:** 1st Place: Oliver Mott from Block Island School; 2nd Place: Kimberly Woodward; 3rd Place: Kelsey Galart.
- **6 to 8 year old group:** 1st Place: Megan Mary Mitchell from Block Island School; 2nd Place: Dave Spier; 3rd Place: Brooke Ortel.
- **9 to 12 year old group:** 1st Place: Katelyn Camara & Cristal Vargas from Providence Street School in Warwick; 2nd Place: Cherelle Straus; 3rd Place: Christina Cataldo and Alexa Quintero.

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Potential Pitfalls in the Primary Prevention of Childhood Lead Exposure

Highlights of Bruce Lanphear's presentation

Children may be harmed at substantially lower lead levels than previously thought and "sub-clinical" lead toxicity remains an important public health problem according to Bruce Lanphear, MD, MPH, who delivered two presentations on May 17th in celebration of Rhode Island's Lead Poisoning Prevention Month. Dr. Lanphear, of the Cincinnati Children's Hospital Medical Center, is a leading researcher in the clinical effects of lead poisoning and was invited by the Childhood Lead Poisoning Prevention Program to speak to fellow pediatricians and to a "lay" audience of community partners.

Dr. Lanphear introduced the topic by presenting an overview of the history of lead poisoning. By 1908, science understood the acute impacts of severe lead poisoning and recognized that prevention could be as simple as not using lead paints in areas where children frequent. (This knowledge resulted in the ban of lead-based paints in most of the Western world in the 1920s – the United States waited until 1978 to do the same.) It took a while longer to recognize subtler, "sub-clinical" effects of lead poisoning. As more and more studies showed mental impairment, hematological, and other ill effects at lower blood lead levels, the "acceptable" level of lead dropped from 60 μg/dL in the 1960s to 10μg/dL in 1991.

Many studies of the effects of blood lead levels on intelligence showed a steeper decline at lower blood lead levels than higher ones, leading some to begin questioning if there are adverse effects below 10μg/dL. Dr. Lanphear's own research using NHANES data and controlling for a variety of factors showed a greater than one point loss in a standardized reading test for every one microgram increase in blood lead concentration, with the loss curve steeper for lower values, all the way down to 2.5 μg/dL. This would suggest, according to Dr. Lanphear, that there may not a threshold for the ill effects of lead, and while a lead level below ten may be considered "typical" it shouldn't be considered acceptable or normal. This assertion is further supported, Dr. Lanphear suggested, by the fact that pre-industrial humans had a practically immeasurable body burden of lead, hundreds of times less than a typical American today.

Lead remains a public health hazard not out of only concern for the individual, but also as a result of the societal problems including increased delinquency and potentially elevated murder rates. While we often worry about neurological problems in children, Dr. Lanphear also noted that lead is a systemic toxin to adults too. By reducing the population average BLL by 1μg/dL, studies estimate that there would be 635,000 fewer persons with hypertension, 3200 fewer heart attacks, and 1300 fewer strokes in the US.

Dr. Lanphear concluded his presentations by making a strong case for primary prevention, shifting from "screening children to screening houses," Rather than use children as a "biological indicator" of poor housing, unsafe dwellings should be identified and improved before children live there. Blood lead screening should only be used as a safety net, and in order to have preventative value, should start well before twelve months of age. However, Dr. Lanphear noted that current environmental standards might not be adequately protecting children and there was little proof that current lead hazard reduction strategies are effective for primary prevention. Future research should set empirically derived, health-based standards for leaded dust as well as to assess the efficacy of lead hazard controls for primary prevention.